ACTUARIAL SCIENCE (ACTSCI)

ACTSCI 290 Introduction to Actuarial Science
3 cr. Undergraduate.
Overview of the actuarial profession, financial risks, and types of insurance products; risk components; and risk evaluation methods. 
Prerequisites: Satisfaction of Quantitative Literacy Part A GER.
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 391 Investment Mathematics I
4 cr. Undergraduate.
Examination of annuities, loans, bonds, portfolio immunization, and interest rate swaps. 
Prerequisites: jr st; grade of C or better in MATH 232(P).
Course Rules: Counts as a repeat of MATH 311.
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 490 Introduction to Actuarial Practice
1 cr. Undergraduate.
Professional topics such as healthcare, pensions, life insurance, property and casualty, reinsurance, and regulation. 
Prerequisites: ACTSCI 290(P).
Course Rules: May be retaken for cr once. Counts as repeat of MTHSTAT 591.
Last Taught: Fall 2018, Fall 2017, Fall 2016, Fall 2015.
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 491 Actuarial Workshop I
1 cr. Undergraduate.
Fundamental interest theory tools integrated with economic and financial concepts; financial mathematics; financial instruments; calculating present and accumulated values for various streams of cash flow. 
Prerequisites: C or better in ACTSCI 391(P) or consent of instructor.
Course Rules: Counts as a repeat of MTHSTAT 593.
Last Taught: Fall 2018, Fall 2017, Fall 2016, Fall 2015.
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 492 Actuarial Science Laboratory I: Probability, Finance, and Economics
1 cr. Undergraduate.
Fundamental probability tools for quantitatively assessing risk integrated with economic and financial concepts; application of tools to actuarial problems; introduction to insurance and risk management. 
Prerequisites: C or better in MthStat 361(P) or cons instr.
Course Rules: Counts as a repeat of MTHSTAT 692.
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 590 Actuarial Internship
1-6 cr. Undergraduate.
Apply principles and techniques of actuarial science in business, governmental and other appropriate settings. 
Prerequisites: soph st; 6 cr 300-level or above in ACTSCI or MTHSTAT; GPA in ACTSCI and MTHSTAT courses at least 2.5. 
Course Rules: May be retaken for cr once. Counts as repeat of MTHSTAT 692.
Current Offerings: Fall 2018, Fall 2016, Fall 2014, Fall 2012.
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 591 Investment Mathematics II
3 cr. Undergraduate.
 Mathematical models in finance and economics, corporate finance. 
Prerequisites: jr st; MTHSTAT 361(P); ACTSCI 391(P).
Course Rules: Counts as repeat of MTHSTAT 692.
Last Taught: Fall 2018, Fall 2016, Fall 2014, Fall 2012.
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 593 Actuarial Models I: Life Contingencies
3 cr. Undergraduate/Graduate.
Modeling and valuation of cash flows dependent on death, survival and other random events. Survival models for single and multiple risks. Life insurances and annuities. 
Prerequisites: jr st; B- or better in each Math 571(P) and Math 311(P); or cons instr.
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 594 Actuarial Models II
3 cr. Undergraduate.
Long term insurance coverage, single life survival models, life insurance, annuities, benefit and premium random variables, mortality models. 
Prerequisites: ACTSCI 593(P); MTHSTAT 362(P).
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 596 Actuarial Statistics I: Fitting of Loss Models
3 cr. Undergraduate.
Statistical modeling of insurance data. Model specification, fitting and validation. Measures of confidence for model-based decisions. 
Prerequisites: jr st; B- or better in each Math 234(P) and MthStat 362(P); CompSci 151(P) or 201(P); or cons instr.
Last Taught: Fall 2017, Fall 2015, Fall 2013, Fall 2011.
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 597 Actuarial Statistics II
3 cr. Undergraduate/Graduate.
Credibility theory, ratemaking, and reserving. 
Prerequisites: jr st; MATH 234(P); MTHSTAT 362(P).
Course Rules: Counts as a repeat of MTHSTAT 597.
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 598 Actuarial Statistics III
3 cr. Undergraduate.
Survival models for single and multiple risks. Life insurances and annuities. 
Prerequisites: jr st; MTHSTAT 361(P); ACTSCI 391(P).
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 599 Capstone Experience
1 cr. Undergraduate.
Independent research on current financial and insurance topics that are not covered in regular actuarial courses. 
Prerequisites: senior standing.
Course Rules: May be retaken for cr once.
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 790 Actuarial Internship
1-6 cr. Graduate.
Apply principles and techniques of actuarial science in business, governmental and other appropriate settings. 
Prerequisites: graduate standing. 
Course Rules: One cr earned for academic work based on 40 hours in internship. May be retaken to 6 cr max.
Current Offerings: https://catalog.uwm.edu/course-search/
ACTSCI 791 Investment Mathematics II
3 cr. Graduate.
Mathematical models in finance and economics, corporate finance.
Prerequisites: graduate standing.
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 793 Actuarial Models I
3 cr. Graduate.
Long term insurance coverage, single life survival models, life insurance, annuities, benefit and premium random variables, mortality models.
Prerequisites: graduate standing.
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 794 Actuarial Models II
3 cr. Graduate.
Long term insurance coverage, single life survival models, life insurance, annuities, benefit and premium random variables, mortality models.
Prerequisites: grad st; ACTSCI 593(P); MTHSTAT 362(P).
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 796 Actuarial Statistics I
3 cr. Graduate.
Loss models for short term insurance and their statistical fitting.
Prerequisites: graduate standing.
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 797 Actuarial Statistics II
3 cr. Graduate.
Credibility theory, ratemaking and reserving.
Prerequisites: graduate standing.
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 891 Actuarial Risk Theory
3 cr. Graduate.
Risk models; premium principles; reinsurance contracts; ruin theory; ordering of risks; bonus-malus systems; IBNR techniques.
Prerequisites: grad st; Math 571(P) & MthStat 596(P), or cons instr
Last Taught: Fall 2017, Fall 2015, Fall 2013, Fall 2011.
Current Offerings: https://catalog.uwm.edu/course-search/

ACTSCI 895 Topics in Actuarial Science:
3 cr. Graduate.
Advanced topics in actuarial science.
Prerequisites: graduate standing, 6 credits of 700 level ACTSCI coursework.
Course Rules: Repeatable to 9 credits max. Counts as a repeat of MTHSTAT 896 with a similar topic.
Current Offerings: https://catalog.uwm.edu/course-search/